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Bibliography

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5E023

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Summary

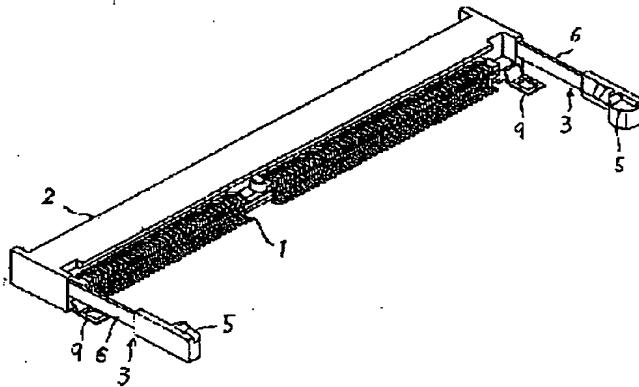
(57) [Abstract]

[Technical problem] Offer a connector with the easy manufacture whose a possibility of causing wear in a connection object was equipped with the few latch arm.

[Means for Solution] The contact 1 for contacting a connection object is made to hold in housing 2, the small substrate 11 is held by engagement and contact is made to contact by the latch arm 3 combined with this housing. The attaching part 4 by which fixed maintenance is carried out, the engagement section 5 for engaging with a small substrate, and an attaching part and the engagement section are enough for housing, and the latch arm has the elastic-deformation section 6 in which elastic

deformation is possible. In this latch arm, an attaching part and the elastic-deformation section are metal, and the engagement section is a product made of a resin.

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CLAIMS

[Claim(s)]

[Claim 1] Contact for contacting a connection object The latch arm for being combined with housing holding the aforementioned contact, and the aforementioned housing, and holding the aforementioned connection object by engagement It is the connector equipped with the above, and the attaching part by which fixed maintenance is carried out, the engagement section for engaging with the aforementioned connection object, and the aforementioned attaching part and the aforementioned engagement section are enough for the aforementioned housing, the aforementioned latch arm has the elastic-deformation section in which elastic

deformation is possible, the aforementioned attaching part and the aforementioned elastic-deformation section are metal, and it carries out that the aforementioned engagement section is a product made of a resin as the feature.

[Claim 2] The aforementioned engagement section is a connector according to claim 1 the aforementioned elastic-deformation section and really fabricated by mould in.

[Claim 3] It is the connector according to claim 1 or 2 by which the aforementioned elastic-deformation section is covered in the covering section made of a resin, and the aforementioned covering section and the aforementioned engagement section are really fabricated mutually.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the connector used in case a main substrate is equipped with a small substrate.

[0002]

[Description of the Prior Art] It is combined with the contact for contacting connection objects, such as a small substrate, housing holding the contact, and housing, and this kind of connector has the latch arm for holding a connection object by engagement.

[0003] A latch arm is made from a metal and making housing carry out fixed maintenance is proposed (for example, refer to JP,5-159829,A).

[0004] Moreover, housing and really fabricating a latch arm by the resin is also proposed (for example, refer to JP,11-26099,A).

[0005]

[Problem(s) to be Solved by the Invention] Since a connection object and a latch arm rub in case a connection object is connected to a connector or it removes, when a latch arm is made from a metal, it has the fault of wearing a connection

object.

[0006] On the other hand, when housing and really fabricating a latch arm by the resin, technology difficult for resin fabrication is required. A latch arm depends it on it being the structure projected for a long time from housing. Moreover, since the intensity of a latch arm tends to become low, it may be necessary to reinforce with a metal.

[0007] So, the technical problem of this invention has the manufacture whose a possibility of causing wear in a connection object was equipped with the few latch arm in offering an easy connector.

[0008]

[Means for Solving the Problem] In the connector which has housing which held the contact and the aforementioned contact for contacting a connection object according to this invention, and a latch arm for being combined with the aforementioned housing and holding the aforementioned connection object by engagement The attaching part by which fixed maintenance of the aforementioned latch arm is carried out at the aforementioned housing, and the engagement section for being engaged at the aforementioned connection object, The aforementioned attaching part and the aforementioned engagement section do, and it has the elastic-deformation section in which elastic deformation is possible, and the aforementioned attaching part and the aforementioned elastic-deformation section are metal, and the connector characterized by the aforementioned engagement section being a product made of a resin is obtained.

[0009] The aforementioned engagement section may the aforementioned elastic-deformation section and really be fabricated by mould in.

[0010] The aforementioned elastic-deformation section is covered in the covering section made of a resin, and the aforementioned covering section and the aforementioned engagement section may really be fabricated mutually.

[0011]

[Embodiments of the Invention] With reference to drawing 1 and drawing 2 , the connector concerning the gestalt of operation of the 1st of this invention is explained.

[0012] The connector of illustration has much conductive contacts 1, the long and slender insulating housing 2 which carried out array maintenance of these contacts 1 in the 1st direction, and a pair of latch arm 3 combined with the both ends in the 1st direction of housing 2. These latch arms 3 were extended in the 2nd direction which intersects perpendicularly in the 1st direction, and in the direction of the 1st, set the interval mutually and have countered. In addition, you may also call the signal contact train of contact 1 wrap mould section for housing 2.

[0013] The attaching part 4 by which fixed maintenance is carried out, the engagement section 5 and an attaching part 4, and the engagement section 5 are enough for housing 2, and each latch arm 3 has the elastic-deformation section 6 in which elastic deformation is possible. An attaching part 4 and the elastic-

deformation section 6 are the products made from a metal plate. On the other hand, the engagement section 5 is a product made of a resin, and is the elastic-deformation section 6 and really fabricated by pressing fit. It can also be considered that each latch arm 3 is what formed the attaching part 4 in the end section of the long metal plate in which elastic deformation is possible, and formed the engagement section 5 made of a resin in the other end at one. In addition, the long metal plate is used according to the 3rd direction which intersects perpendicularly in the direction of the 1st and the 2nd in the cross direction.

[0014] The latch attaching hole 7 is formed in the both ends in the 1st direction of housing 2, and the latch arm 3 is attached in housing 2 by pressing an attaching part 4 fit here.

[0015] In the both ends in the 1st direction of housing 2, further, the holddown attaching hole 8 is formed and the metal holddown 9 is pressed fit here. A holddown 9 contacts the main substrate (not shown) in which this connector is carried.

[0016] The operating state of this connector is explained also with reference to drawing 3 and drawing 4.

[0017] The small substrate 11 is used as a connection object of this connector 10. In order to connect the small substrate 11 to a connector 10, the end of the small substrate 11 is first inserted aslant from the upper part to a connector 10, and contact 1 is made to contact. Next, the other end of the small substrate 11 is depressed and the engagement section 5 of nothing and the latch arm 3 is made to engage with a level posture at the small substrate 11. Although the width of face of the small substrate 11 is larger than the mutual interval of a pair of engagement section 5, it is easily possible to make the small substrate 11 hidden by carrying out elastic deformation of the elastic-deformation section 6 under the engagement section 5. In addition, two or more IC parts 12 are carried in the small substrate 11.

[0018] According to the connector mentioned above, since the engagement section 5 is a product made of a resin, it has few possibilities of causing wear in a connection object. Since the latch arm 3 is moreover made independently [housing 2], manufacture of housing 2 is easy. Moreover, only this portion can also be exchanged when the engagement section 5 is worn out. Furthermore, since the elastic-deformation section 6 is a metal, when equipping with a small substrate, meanses, such as a guide, are unnecessary [it is strong, and].

[0019] With reference to drawing 5, the connector concerning the gestalt of operation of the 2nd of this invention is explained. The same sign is given to the same portion and explanation is omitted.

[0020] In the connector of illustration, the engagement section 5 is really fabricated by the mould in of a resin at a part of elastic-deformation section 6.

[0021] With reference to drawing 6 and drawing 7, the connector concerning the gestalt of operation of the 3rd of this invention is explained. The same sign is given to the same portion and explanation is omitted.

[0022] In the connector of illustration, the latch arm 3 has ***** which covered

the elastic-deformation section 6 in the covering section 13 made of a resin. The covering section 13 is fabricated by the mould in of a resin with the engagement section 5 at the elastic-deformation section 6 and one. That is, an attaching part 4 is formed in the end section of the long metal plate in which elastic deformation is possible, and the mould of the engagement section 5 and the covering section 13 made of a resin is carried out to the other end and pars intermedia at one. An attaching part 4 is pressed fit in the latch attaching hole 7 of housing 2 after a resin mould, and, thereby, fixed maintenance of the housing 2 ** is carried out for the latch arm 3.

[0023]

[Effect of the Invention] As explained above, according to this invention, the manufacture whose a possibility of causing wear in a connection object was equipped with the few latch arm can offer an easy connector.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective diagram of the connector concerning the gestalt of operation of the 1st of this invention.

[Drawing 2] It is the partial diagrammatic view showing the decomposition state of the connector of drawing 1 .

[Drawing 3] It is the side elevation showing the busy condition of the connector of drawing 1 .

[Drawing 4] It is the plan showing the busy condition of the connector of drawing 1 .

[Drawing 5] It is the perspective diagram of only the important section of the connector concerning the gestalt of operation of the 2nd of this invention.

[Drawing 6] It is the perspective diagram of only the important section of the connector concerning the gestalt of operation of the 3rd of this invention.

[Drawing 7] It is the decomposition perspective diagram of the connector of drawing

6.

[Description of Notations]

- 1 Contact
- 2 Housing
- 3 Latch Arm
- 4 Attaching Part
- 5 Engagement Section
- 6 Elastic-Deformation Section
- 7 Latch Attaching Hole
- 8 Holddown Attaching Hole
- 9 Holddown
- 10 Connector
- 11 Small Substrate
- 12 IC Parts
- 13 Covering Section

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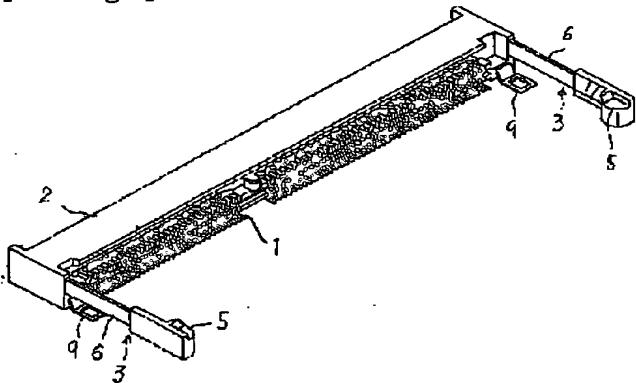
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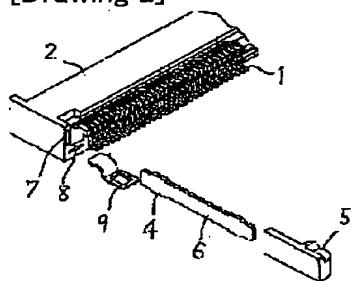
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DRAWINGS

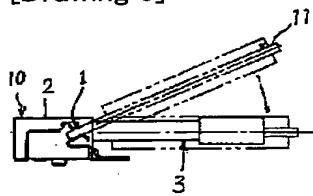
[Drawing 1]



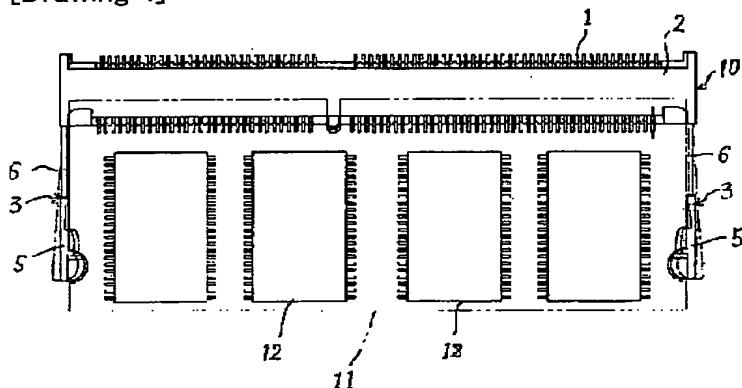
[Drawing 2]



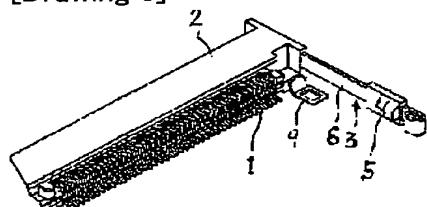
[Drawing 3]



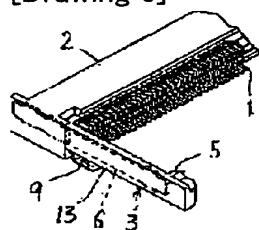
[Drawing 4]



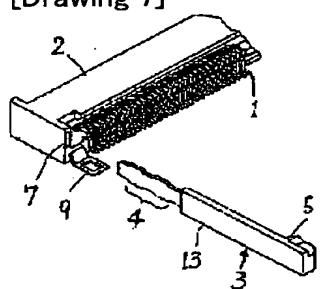
[Drawing 5]



[Drawing 6]



[Drawing 7]



[Translation done.]

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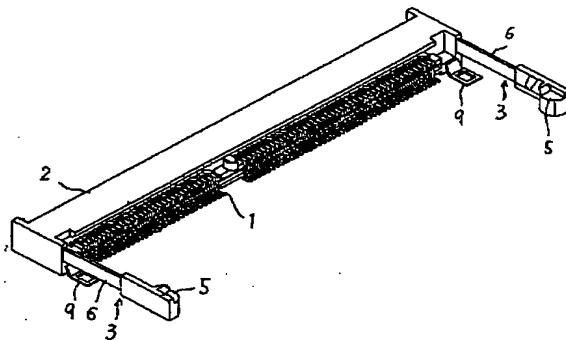
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(54)【発明の名称】 コネクタ

(57)【要約】

【課題】 接続対象物に摩耗を引き起こす虞が少ないラッチアームを備えた製造が容易なコネクタを提供すること。

【解決手段】 接続対象物に接触するためのコンタクト1をハウジング2に保持させ、このハウジングに結合したラッチアーム3により小型基板11を係合により保持してコンタクトに接触させる。ラッチアームは、ハウジングに固定保持される保持部4と、小型基板に係合するための係合部5と、保持部及び係合部の間にあって弾性変形が可能な弾性変形部6とを有している。このラッチアームにおいて、保持部及び弾性変形部は金属製であり、係合部は樹脂製である。



【特許請求の範囲】

【請求項1】接続対象物に接触するためのコンタクトと、前記コンタクトを保持したハウジングと、前記ハウジングに結合され、前記接続対象物を係合により保持するためのラッチアームとを有するコネクタにおいて、前記ラッチアームは、前記ハウジングに固定保持される保持部と、前記接続対象物に係合するための係合部と、前記保持部及び前記係合部の間にあって弾性変形が可能な弾性変形部とを有し、

前記保持部及び前記弾性変形部は金属製であり、前記係合部は樹脂製であることを特徴とするコネクタ。

【請求項2】前記係合部はモールドインにより前記弾性変形部と一体成形されている請求項1に記載のコネクタ。

【請求項3】前記弾性変形部は樹脂製の被覆部で覆われており、前記被覆部及び前記係合部は互いに一体成形されている請求項1又は2に記載のコネクタ。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、小型基板をメイン基板に装着する際等に用いられるコネクタに関する。

【0002】

【従来の技術】この種のコネクタは、小型基板などの接続対象物に接触するためのコンタクトと、そのコンタクトを保持したハウジングと、ハウジングに結合され、接続対象物を係合により保持するためのラッチアームとを有している。

【0003】ラッチアームを金属にて作り、ハウジングに固定保持させることが提案されている（例えば特開平5-159829号公報参照）。

【0004】また、ラッチアームを樹脂にてハウジングと一体成形することも提案されている（例えば特開平11-26099号公報参照）。

【0005】

【発明が解決しようとする課題】コネクタに接続対象物を接続したり取り外したりする際に接続対象物とラッチアームとが擦れ合うので、ラッチアームが金属にて作られた場合は接続対象物を摩耗させてしまうという欠点をもつ。

【0006】一方、ラッチアームを樹脂にてハウジングと一体成形する場合は、樹脂成形に難しい技術を要する。それは、ラッチアームがハウジングから長く突出した構造であることによる。また、ラッチアームの強度が低くなりやすいため、金属で補強することが必要になることもある。

【0007】それ故に本発明の課題は、接続対象物に摩耗を引き起こす虞が少ないラッチアームを備えた製造が容易なコネクタを提供することにある。

【0008】

【課題を解決するための手段】本発明によれば、接続対

象物に接触するためのコンタクトと、前記コンタクトを保持したハウジングと、前記ハウジングに結合され、前記接続対象物を係合により保持するためのラッチアームとを有するコネクタにおいて、前記ラッチアームは、前記ハウジングに固定保持される保持部と、前記接続対象物に係合するための係合部と、前記保持部及び前記係合部の間にあって弾性変形が可能な弾性変形部とを有し、前記保持部及び前記弾性変形部は金属製であり、前記係合部は樹脂製であることを特徴とするコネクタが得られる。

【0009】前記係合部はモールドインにより前記弾性変形部と一体成形されていてもよい。

【0010】前記弾性変形部は樹脂製の被覆部で覆われておらず、前記被覆部及び前記係合部は互いに一体成形されていてもよい。

【0011】

【発明の実施の形態】図1及び図2を参照して、本発明の第1の実施の形態に係るコネクタについて説明する。

【0012】図示のコネクタは、導電性の多数のコンタクト1と、これらのコンタクト1を第1の方向に配列保持した細長い絶縁性のハウジング2と、ハウジング2の第1の方向での両端部に結合された対のラッチアーム3とを有している。これらのラッチアーム3は、第1の方向に直交する第2の方向にのびかつ第1の方向で互いに間隔を置いて対向している。なお、ハウジング2を、コンタクト1の信号接点列を覆うモールド部と呼んでもよい。

【0013】各ラッチアーム3は、ハウジング2に固定保持される保持部4と、係合部5、保持部4及び係合部5の間にあって弾性変形が可能な弾性変形部6とを有している。保持部4及び弾性変形部6は金属板製である。

一方、係合部5は樹脂製であり、圧入により弾性変形部6と一体成形されている。各ラッチアーム3は、弾性変形可能な長尺金属板の一端部に保持部4を設け、他端部に樹脂製の係合部5を一体に設けたものとみなすことができる。なお、長尺金属板はその幅方向を第1及び第2の方向に直交する第3の方向に合せて使用されている。

【0014】ハウジング2の第1の方向での両端部にラッチ取付穴7を設け、ここに保持部4を圧入することによりラッチアーム3をハウジング2に取付ける。

【0015】ハウジング2の第1の方向での両端部には、さらに、ホールドダウン取付穴8を設け、ここに金属製のホールドダウン9を圧入する。ホールドダウン9は、このコネクタを搭載するメイン基板（図示せず）に当接するものである。

【0016】図3及び図4をも参照して、このコネクタの動作状態について説明する。

【0017】このコネクタ10の接続対象物として小型基板11を用いる。小型基板11をコネクタ10に接続するには、まず小型基板11の一端をコネクタ10に対

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し上方から斜めに挿入し、コンタクト1に接触させる。次に、小型基板11の他端を押し下げて水平な姿勢になし、ラッチアーム3の係合部5を小型基板11に係合させる。小型基板11の幅は対の係合部5の相互間隔よりも大きいが、弾性変形部6を弾性変形させることで小型基板11を係合部5の下方に潜り込ませることが容易に可能である。なお、小型基板11には複数のIC部品12が搭載されている。

【0018】上述したコネクタによると、係合部5は樹脂製であるため接続対象物に摩耗を引き起こす虞が少ない。その上、ラッチアーム3がハウジング2とは別に作られるため、ハウジング2の製造が容易である。また、係合部5が摩耗した時には、この部分のみを交換することもできる。さらに、弾性変形部6が金属であるため、丈夫であり、小型基板を装着する時にもガイドなどの手段は不要である。

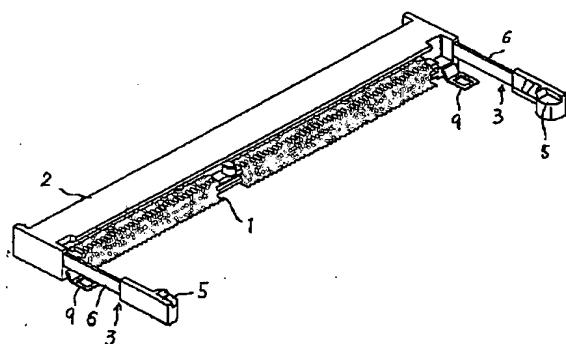
【0019】図5を参照して、本発明の第2の実施の形態に係るコネクタについて説明する。同様な部分には同じ符号を付して説明を省略する。

【0020】図示のコネクタにおいて、係合部5は樹脂のモールドインにより弾性変形部6の一部に一体成形されている。

【0021】図6及び図7を参照して、本発明の第3の実施の形態に係るコネクタについて説明する。同様な部分には同じ符号を付して説明を省略する。

【0022】図示のコネクタにおいて、ラッチアーム3は弾性変形部6を樹脂製の被覆部13で覆った構造を有する。被覆部13は係合部5と共に樹脂のモールドインにより弾性変形部6と一緒に成形されている。即ち、弾性変形可能な長尺金属板の一端部に保持部4を設け、他端部及び中間部に樹脂製の係合部5及び被覆部13を一体にモールドしている。樹脂モールドの後、保持部4をハウジング2のラッチ取付穴7に圧入し、これによりラッチアーム3をハウジング2に固定保持させる。*

【図1】



*【0023】

【発明の効果】以上説明したように、本発明によれば、接続対象物に摩耗を引き起こす虞が少ないラッチアームを備えた製造が容易なコネクタを提供することができる。

【図面の簡単な説明】

【図1】本発明の第1の実施の形態に係るコネクタの斜視図である。

【図2】図1のコネクタの分解状態を示す部分図である。

【図3】図1のコネクタの使用状態を示す側面図である。

【図4】図1のコネクタの使用状態を示す平面図である。

【図5】本発明の第2の実施の形態に係るコネクタの要部のみの斜視図である。

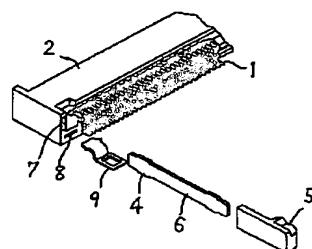
【図6】本発明の第3の実施の形態に係るコネクタの要部のみの斜視図である。

【図7】図6のコネクタの分解斜視図である。

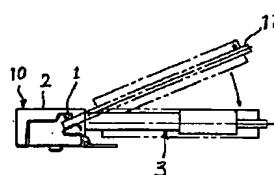
【符号の説明】

1	コンタクト
2	ハウジング
3	ラッチアーム
4	保持部
5	係合部
6	弾性変形部
7	ラッチ取付穴
8	ホールドダウン取付穴
9	ホールドダウン
10	コネクタ
11	小型基板
12	IC部品
13	被覆部

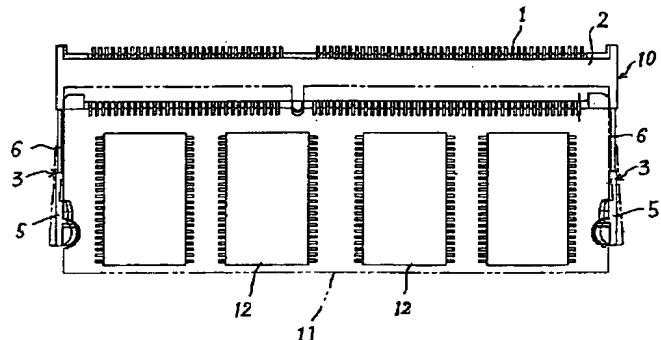
【図2】



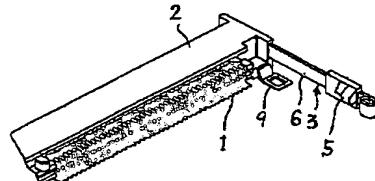
【図3】



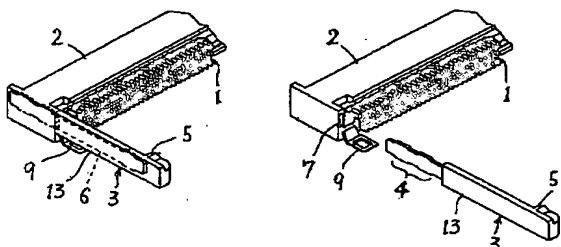
【図4】



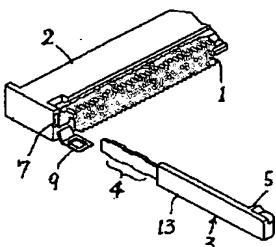
【図5】



【図6】



【図7】



フロントページの続き

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